

**NOTES ON DICHELONYCHA AND CANTHARIS, WITH
DESCRIPTIONS OF NEW SPECIES IN
OTHERA GENERA.**

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The observations on the two genera above named are, as is often the case, the outgrowth of an effort toward a satisfactory arrangement of my own cabinet. The loan of material from other sources has, however, permitted a much more comprehensive view than would otherwise have been possible, and I desire therefore to express my hearty thanks to all who have thus given assistance, particularly to my friends Mr. Chas. Fuchs, Dr. E. C. Van Dyke and Dr. F. E. Blaisdell, of San Francisco, and to Dr. L. O. Howard and Mr. E. A. Schwarz of the National Museum, from whose collections I received the entire material in these genera. To Mr. Frederick Blanchard and Mr. Chas. Liebeck I am indebted for notes on the LeConte and Horn collections, further reference to which will be made in the proper place.

DICHELONYCHA.

Since the Synopsis of this genus given by Dr. Horn in 1876,* it has almost entirely escaped the attention of systematists; one species only—*picea* Horn †—having been subsequently made known. New forms have, however, come to light, until the number awaiting description has become, I think, greater than in any other genus of the Scarabæidæ, with the probable exception of *Diploaxis*. Nearly all of these new forms belong to the Pacific Coast fauna, and are either quite unknown to eastern collectors, or are mixed there with older species—usually *backii* or *valida*—so that the description in the following pages of nine species will perhaps excite some surprise.

Taken as a whole, the genus is very homogeneous in its makeup, and in the survey of our species, which has of necessity accompanied the definition of the new forms, I have found little to add in the way of characters serviceable for classification, to those set forth by Dr. Horn in his Synopsis.

* Trans. Am. Ent. Soc., vol. v, p. 185.

† Proc. Cal. Acad. Sci., 1894, p. 396.

The presence or absence of a moderately deep longitudinal groove on the pronotum has offered a ready means of dividing our species into two primary groups. The division is apparently a natural one, inasmuch as there are several concurring differences in structural details, which, although suffering some exceptions, are so constant as to be regarded as group characters. Dr. Horn has already called attention to one of these, viz.: that in the species with sulcate thorax the hind claws are very nearly simple. One of the forms described here as new (*decolorata*) is exceptional in that the posterior claws are cleft in nearly the same degree as prevails throughout the other group.

Again, in the group with sulcate thorax, the spurs of the posterior tibiae, except in *pusilla*, are mutually equal in length in the male, and nearly so in the female, and, as a rule, are sexually modified; while in the non-sulcate series the posterior tibial spurs are distinctly unequal in length and exhibit almost no sexual modifications. The impression on the outer side of the terminal joint of the maxillary palpi, which, in the non-sulcate species, exists as an elongate oval, slightly flattened area, becomes in the sulcate species distinctly excavated. Two exceptions in each series, however, must be noted; *muscula* and *nana* having the joint distinctly impressed, while *decolorata* and *pusilla* show scarcely a trace of it.

There is usually not the least difficulty in recognizing the sexes. LeConte says "The males are more slender in form than the females, and are distinguished by the club of the antennæ being as long as the funiculus." To this Horn adds that "the abdomen viewed in profile from the side, is convex along the median line in the female and concave in the male." With the exception of *elypeuta*, and possibly of *pallens* (males of which have not been seen), the above characters hold good throughout our series.

A more exhaustive examination enables me to add several other less conspicuous sexual differences which apply almost as generally, but in somewhat variable degree. In the males the eyes are usually noticeably larger and more prominent; the terminal joint of the maxillary palpi is frequently broader and more widely truncate at apex; the anterior tibiae are less strongly produced, and the posterior thighs are more slender than in the female. The sexual difference in the last joint of the maxillary palpi is well shown in *elongata*, *subvittata*, *testacea*, *diluta* and *fuscula*, and is quite obvious in

most species with non-sulcate thorax. It, however, nearly or quite fails in *robusta*, *longiclava*, *truncata* and *picca*, in which the terminal joint is more pointed and feebly truncate in both sexes. In the species with sulcate thorax there is but little sexual disparity in this regard, the terminal joint being more slender and less broadly truncate at apex than in the sulcate series.

There is a marked tendency throughout the genus toward paleness in color; the under surface, head and thorax most frequently, the elytra more rarely, becoming partly or entirely rufous or testaceous. This tendency is more pronounced in the females, and in certain species, *fulgida* and *crotchii*, the head, thorax and body beneath are normally pale in this sex, the same parts being blackish or piceous in the males.

In antennal structure there is little variation in the genus. In the few known specimens of *picca* these organs are 8 jointed; in all others they seem to be normally 9 jointed. In the single female of *robusta* there are only eight joints, but as there are nine in the male, I suspect this may be accidental. Such accidents are not rare in the Lamellicornia, where the number of joints in the funicle is frequently subject to an individual decrease through coalescence. The antennal club in the male is normally subequal in length to the funicle, and is about twice as long as in the female; to this, however, there are three exceptions. In *clypeata* the male club is very short, not differing appreciably from that of the female; a most extraordinary fact. In *pallens* the female club is unusually long, being about equal to the funicle, a condition which is, however, in part due to the shortness of the latter; males have not been seen. In the male of *longiclava* the club is abnormally long, being sensibly equal to the basal joint and funicle combined; of this species females have not been seen.

Geographically speaking, *Dichelonycha* is widely dispersed, but the genus is essentially a northern one; or more accurately, it is nearly confined to the Boreal and Transition Zones,* which, with the exception of the highlands of Pennsylvania and a narrow strip along the Alleghany Mountains, reach their southern limits in the Eastern United States in about the latitude of New York City and the southern lake region; but which in the Rocky Mountains and Pacific regions extend entirely across the country. In the East,

* See Merriam's Life Zones of the United States.

one species only—*fuscula*—is characteristic of the Carolinian region, though several others—*subvittata*, *testacea* and *truncata* (Nebraska), and *elongata* (Kansas and Texas?)—have been occasionally found within its boundaries. In Southern California, *muscula* and *truncata* range from elevations of one thousand to six thousand feet or more, thus inhabiting indifferently both the Sonoran and Tranton Zones; while *pusilla* and *nana* (Southern California), and *picea* (Lower California) should probably be regarded as true members of the Sonoran fauna.

The following table is devised for the separation of the species now known to me. The order here is merely one of convenience, and not that which should be followed in a cabinet arrangement. The sequence of species in the notes following the table is the best, I can now suggest, but, as is often the case in a linear arrangement, it is in some respects unsatisfactory.

Prothorax without a well-defined median longitudinal sulcus; the disk evenly convex, or at most with a faintly impressed median line.....1.

Prothorax rather deeply longitudinally sulcate.....7.

1. Antennæ 8-jointed; color brownish to testaceous, without metallic lustre (Lower California).....**picea.**

Antennæ 9-jointed.

Clypeal angles right, or even slightly acute.....**truncata.**

Clypeal angles more or less rounded.....2.

2. Antennal club short and equal in the sexes; clypeus strongly prolonged in front of the labrum; color black.....**clypeata.**

Antennal club much longer in the male (male of *pallens* not seen); clypeus less advanced.

Antennal club in the male as long as the entire stem.....**longiclava.**

Antennal club in the male subequal in length to the funicle.....3.

3. Terminal joint of maxillary palpi narrowed apically, the tip feebly truncate; sides of thorax as viewed from above arcuate; form very robust.

robusta.

* Terminal joint of maxillary palpi widened apically, and more or less broadly obliquely truncate; sides of thorax distinctly subangulate.....4.

4. Prevailing color testaceous, the elytra often with faint greenish or æneous surface lustre.

Head, including the eyes, distinctly more than half as wide as the thorax in both sexes.

Clypeus densely punctate and more opaque, more narrowly reflexed, the suture unimpressed; elytra with lateral darker vitta, which is more pronounced at its extremities.....**subvittata.**

Clypeus less densely punctate, shining, less narrowly reflexed, the suture deeply impressed; elytra faintly æneous, without lateral vitta.

diluta.

Head narrower, not or scarcely exceeding half the thoracic width in the female.

- Clypeus rather broadly reflexed; antennal club in the female shorter than the funicle; hind angles of the thorax distinct; sculpture of upper surface finer **testacea.**
- Clypeus narrowly reflexed; antennal club in the female as long as the funicle; hind angles of the thorax very obtuse; surface sculpture coarser **pallens.**
- Prevailing color dark; the elytra in fully colored specimens more or less brilliant green or bronze, frequently with narrow pale limb 5.
5. Sexes similarly colored 6.
- Head, thorax and body beneath black or piceous in the male, rufous in the female; clypeal suture distinctly impressed.
- Elytra finely and densely transversely wrinkled, the punctuation indistinct; basal marginal line of thorax nearly obliterated at middle; hind angles of thorax less marked **crotchii.**
- Elytra less densely transversely rugose, the punctuation coarser and distinct; basal marginal line of thorax more evident; the hind angles more prominent **fulgida.**
6. Sides of thorax sinuate posteriorly, the hind angles prominent.
- Clypeal suture unimpressed, often indistinct; surface lustre green, legs in great part pale.
- Clypeus narrowly reflexed, front tibiae tridentate **elongata.**
- Clypeus more broadly reflexed, front tibiae sub-bidentate **canadensis.**
- Clypeal suture deeply impressed; surface lustre bronze; legs variable. **fuscula.**
- Sides of thorax feebly sinuate posteriorly, the angles distinct but obtuse; head, especially in the female, relatively smaller and narrower than in allies; elytra brilliant green, usually without pale limb; appendages normally blackish throughout **backii.**
- Sides of thorax not sinuate posteriorly; species small (California).
- Hind angles of thorax distinct but obtuse **vaga.**
- Hind angles of thorax rounded and indistinct.
- Clypeus more broadly reflexed; elytra green, sutural angles prominent. **nana.**
- Clypeus more narrowly reflexed; elytra bronzed, sutural angles not prominent **muscula.**
7. Size small; prothorax feebly sparsely punctate; spurs of hind tibiae acute, unequal in length, but otherwise nearly similar, and not differing in the sexes **pusilla.**
- Size larger; prothorax coarsely but evenly punctured; spurs of hind tibiae in the male nearly equal in length, but mutually more or less dissimilar and truncate or obtuse at tip 8.
8. Outer spur of hind tibiae in the male very much wider than the inner and distinctly contorted.
- Elytra with distinct greenish lustre **albicollis.**
- Elytra testaceous, with piceous lateral vitta **lateralis.**
- Outer spur of hind tibia in the male distinctly wider than the inner, but less strongly so, and scarcely contorted 9.
9. Elytra testaceous, with piceous lateral vitta, the later sometimes wanting or visible only at the apical umbone **decolorata.**

- 1 Elytra uniformly green, or piceous, with distinct greenish or bronze lustre, the lateral margin often narrowly pale10.
 10. Prothorax with disk in great part impunctate; elytra piceous; deeply but not conspicuously bronzed; elypeal suture broadly deeply impressed.

sulcata.

- Prothorax with disk in great part punctate.....11.
 1. Outer spur of hind tibia in the male but little wider than the inner; elytra in the male piceous; more or less bronzed or dark green.
 Clypeal suture feeble or indistinct; the elytra in the female often of a brighter green than in the male, but otherwise usually rufous or testaceous throughout**valida.**
 Outer spur of hind tibia in the male more conspicuously wider than the inner; elytra brilliant green in both sexes.....**vicina.**

1. D. elongata Fab.

This is by far the commonest species in New England, whence it ranges north into Canada, south through New Jersey and Pennsylvania, and as far west as Kansas, though its occurrence there is very exceptional. I have seen a specimen labelled "Tex" in Mr. Fuch's collection—possibly an error. The beetles have been recorded as occurring on different species of *Salix* (Kirby), on various oaks (Bethune), on leaves of oak in May in Southern Michigan (Townsend), and on birch in June (Packard). I have taken it abundantly on pines in July in New Hampshire and Massachusetts.

2. D. canadensis Horn.

This species is quite unknown to me, nor do I know if there are any in collections besides the type.

3. D. subvittata Lec.

This species has about the same range as *elongata*, but is certainly more common farther north. I do not know that it has been taken in southern New England, nor does Smith include it in the New Jersey list. It occurs in northern New Hampshire and is common about Montreal and thence west to the Great Lakes. It is not rare at Duluth, Minn. (Daggett), and I have seen specimens from Northern Illinois, and one from Eastern Nebraska. Hamilton records it as common, especially on hazel, near Pittsburg.

It seems not to have been noticed that the inner spur of the hind tibia in the male is a little wider and obtusely rounded (subspatulate) at tip. A similar disparity exists in males of *fuscata* and *diluta*, and though subject to some individual variation, is obvious enough when a sufficient series is examined.

4. **D. diluta** sp. nov.

Mixed with *elongata* in Mr. Fuch's collection, and with *fuscula* in the National Museum collection, were specimens from Massachusetts, New York and Michigan (Detroit), which I have ventured to separate under the above name. Superficially these specimens most closely resemble very pale examples of *elongata*, and they will probably be found in most eastern collections mixed with these or possibly *testacea*. Structurally they are nearest *fuscula*, with which they closely agree in most respects. There is in *diluta*, however, no sign of the deep bronze color so characteristic of the elytra in *fuscula*, the entire insect being pale testaceous, the thorax slightly darker and the elytra feebly washed with green. The form is also a little more elongate and the elytra somewhat less coarsely punctate. The clypeal suture is rather deeply impressed, and by this means as well as by the less densely but rather more deeply punctate clypeus, it may be readily separated from *elongata*. In addition to this it may be said that in *diluta* the hind legs are entirely pale, and the inner spur of the hind tibia in the male is distinctly broader and more obtuse, becoming usually slightly dilated at apex, much as in *subvittata*. From both *subvittata* and *testacea*, *diluta* is distinguished by the impressed clypeal suture, and from the latter still further by the more narrowly reflexed clypeus, the more deeply impressed subapical marginal line of the prothorax, and the greater disparity between the hind tibial spurs. I believe the range of the species to be distinctly more northern than that of *fuscula*.

As an illustration of what may be the state of affairs in many eastern collections, I quote the following from a letter just received from my friend Mr. Frederick Blanchard, who, at my suggestion, looked through the material in the Cambridge Museum. Mr. Blanchard writes "There is a large series of *Dichelonycha elongata* in the LeConte collection, and at the end of the last row were two likely looking specimens, one of which proved to be your new species. In the museum miscellaneous unsorted specimens I found four: a pair from Virginia; 1 ♀, Lawrence, Mass.; 1 ♂, Sherborn, Mass., June 7, '91. In my own material of about two dozen specimens I could find none, but I have little doubt it occurs here." (Tyngsboro, Mass.)

5. **D. fuscula** Lec.

As has already been remarked, this is the only species in our

fauna peculiar to the Carolinian area. It has occurred as far north as Long Island (Beutenmüller), and its western and southern limits so far as recorded are Missouri and Georgia. According to Dr. Hamilton it is common near Pittsburg on biennial oak. Dr. D. M. Castle* records finding many specimens near Philadelphia on beech and oak trees: the males appearing first, the females a week or two later. He also states that specimens have been taken at Lancaster, Pa., on flowers in mid-summer. The following localities are represented in the material before me: Pennsylvania, New Jersey, District of Columbia, Maryland, Kentucky, Tennessee and Missouri.

6. **D. testacea** Kby.

Judging from the few specimens seen, this species is not a common one. It is exclusively northern in range, as the following localities indicate: Vermont, Lake Superior, Winnipeg, Montana, Nebraska.

7. **D. backii** Kby.

Nearly every genus of any complexity possesses one or more species which serve as catch-alls for everything doubtful in their vicinity. At present, about everything with brilliant elytra and dark legs passes as *backii*, and in the material which has served as the basis for these notes, no less than six species carry this label. As a matter of fact there lies between *backii* on the one hand, and *crotchii* and *fulgida* on the other, a debatable ground that is overrun with a puzzling mixture of forms that are neither typical *backii* nor yet safely referable to either *crotchii* or *fulgida*.

What I have considered the true *backii* occupies the territory north of Lake Superior and thence west to the Rocky Mountains. The color in mature specimens is always black or nearly so throughout, except the elytra which are brilliant green or purplish, rarely with golden or coppery reflections. The head is distinctly smaller relative to the thorax, and the eyes a little less prominent than in the corresponding sex of *crotchii* or *fulgida*; the clypeus is also more broadly reflexed. Specimens from Colorado, Wyoming, Eastern Washington and even Arizona and Southern California, while differing in certain details are so nearly in accord with the typical form that they must, for the present at least, be placed there.

* Ent. Student, vol. ii, p. 5.

Other specimens from Utah, now standing as *backii*, are surely not that species, the larger head and more narrowly reflexed clypeus showing them to be more nearly related to *fulgida* and *crotchii*. The elytral sculpture is intermediate between typical *crotchii* and *fulgida*, and the very few females seen do not differ in color from the males. It is quite probable that they deserve a name, but more specimens are needed before we can speak with confidence.

8. **D. fulgida** Lec.

9. **D. crotchii** Horn.

These two species are closely related, and there appear to be no characters other than those mentioned in the table by which they may be distinguished. These are quite sufficient in the case of typical specimens, but intermediates are not lacking. *Fulgida* occurs from Vancouver to Northern California and eastward to Montana and the Wahsatch Mountains of Utah. I have no positive evidence that *crotchii* has ever been taken elsewhere than in the Californian Sierras from Lake Tahoe southward to the San Bernardino Mountains. As remarked under *backii*, certain Utah specimens resemble *crotchii* quite closely; they are, however, quite as near *fulgida*, and it is not unlikely that they represent a closely allied but distinct species. Specimens from the Siskiyou Mountains of Northern California are intermediate in elytral sculpture between the more typical northern *fulgida* and *crotchii*; the balance of affinities, however, lie with *fulgida*. *Crotchii* is found on pines during midsummer, usually at altitudes of 5000 to 7000 feet, and it is probable that *fulgida* has similar habits.

10. **D. vaga** sp. nov.

Most nearly related to *backii*, under which it would fall in Horn's table. As compared with *backii*, the present species is rather less robust, the thorax relatively smaller, the disparity between the size of the head and thorax distinctly less, the clypeus a little less widely reflexed, more squarely truncate in front, with the angles more narrowly rounded.

The color is piceous or black, often with the margin of clypeus, lateral margins of thorax, legs and antennæ testaceous; elytra varying from brilliant green, with narrow pale margin to testaceous, with greenish surface lustre. In fully colored specimens the legs

are usually piceous, the tarsi somewhat paler. The scutellum is always black, even in the palest specimens, while the antennæ are always pale, except the club, which is usually darker. The sides of the thorax are not at all sinuate before the hind angles, which are obtuse, though fairly well defined. The thoracic punctuation is evidently finer and sparser than in *backii*. Length 6.2–7.5 mm.

Hab.—California; Kaweah (4275–6000 feet), and “Tuolumne County, Mokelumne Hill” (Blaisdell). Nevada.

I have seen many specimens collected by Mr. Ralph Hopping at the first named locality, and these are to be regarded as the types. The Nevada specimens are slightly different in some minor respects, but I have little doubt of their identity.

11. *D. nana* sp. nov.

Very small, black, elytra brilliant green, with pale lateral margin. Head densely punctate, clypeus truncate, or even very faintly sinuate in front, the margin rather strongly reflexed; clypeal suture slightly impressed. Thorax small, shining, rather coarsely but usually very sparsely and somewhat irregularly punctate; sides not sinuate posteriorly, hind angles very obtuse. Elytra coarsely punctate, sutural angle subacuminate. Length $5\frac{1}{2}$ –6 mm.

Hab.—California; San Diego (Dunn), Poway (Blaisdell). Eight examples.

This pretty little species is the smallest in our fauna, and all specimens thus far known are from a very restricted locality. It is most nearly related to *muscula*, but appears to be distinct by its uniformly more brilliant color, smaller size, less conspicuous pubescence, more strongly reflexed clypeus, which is more squarely truncate in front, with less broadly rounded angles, more sparsely and relatively more closely punctured thorax, and by the form of the sutural angle of the elytra.

12. *D. muscula* sp. nov.

Piceous, elytra bronzed, more rarely with greenish or faint cupreous lustre; side margin narrowly pale. Head feebly but closely sculptured, clypeus faintly arcuate in front, the angles broadly rounded, margin rather narrowly reflexed, suture lightly impressed. Thorax strongly rounded at sides, which are not sinuate posteriorly; hind angles rounded, not defined; surface finely somewhat sparsely punctate, base finely margined, subapical line distinctly impressed. Elytra rather coarsely closely punctate; body throughout conspicuously pubescent. Length $5\frac{1}{2}$ –8 mm.

Hab.—California (Los Angeles County). Sixteen examples.

This species has been placed with *fuscula* in collections on the

authority of Dr. Horn, who seems, however, to have had some doubt of their identity, judging from the placing of the specimens in his cabinet. *Fuscula* is probably confined to the Atlantic region, and may be easily distinguished from *muscula* by the prominent hind angles of the thorax, and the obvious disparity in the hind tibial spurs in the male; a careful comparison will show numerous other differences in minor details.

13. **D. longiclava** sp. nov.

Rather robust, piceous, elytra distinctly bronzed, with rather broad nebulosely pale side margin. Head but little more than half as wide as the prothorax, densely but not deeply punctate; clypeal suture faint, not impressed; clypeus moderately reflexed, distinctly sinuate in front, the sides convergent anteriorly, the angles rounded. Antennal club (♂) very long, about one-half longer than the funicle, and fully equal to all the preceding joints combined; terminal joint of maxillary palpi slender, gradually pointed from about the basal third, the apex narrowly truncate. Prothorax nearly as wide as the elytra, widest before the middle, sides not sinuate posteriorly, hind angles obtuse, but well defined; surface closely punctate throughout and with a feeble but distinct median sulcus; basal and apical marginal lines fairly well defined. Elytra moderately strongly and closely punctate, the inner of the three longitudinal raised lines—present in many species—evident, the others barely detectable. Length $6\frac{1}{2}$ mm.

Hab.—California (Sonoma County, Ricksecker).

Two males only have been seen. In both of these the antennal club is virtually destitute of the usual setæ, which sparsely clothe the external faces of first and last joints. This is possibly accidental, but the specimens are otherwise in good condition, and it is difficult to see how they could have become so completely denuded. *Longiclava* looks not very unlike *muscula*, but the resemblance is only superficial. The great length of the antennal club is not approached by any other species of the genus. A third specimen, also a male, has recently been sent me from the Cambridge Museum. It agrees completely in antennal formation with the original specimens, but has the elytra entirely pale.

14. **D. pallens** Lec.

A rare species, of which I have seen only four specimens, including the type; all females. The type is without definite locality, the other three are from the Santa Cruz Mountains, in the middle coast region of California. The small size, pale color, coarse elytral sculpture, relatively small head, with narrowly reflexed clypeus and long antennal club, make its recognition easy.

15. **D. robusta** sp. nov.

Form stout, convex; black, elytra green. Head densely, thorax and elytra rather closely uniformly punctate; clypeus rather strongly reflexed, truncate and faintly sinuate in front, sides very slightly divergent posteriorly; clypeal suture faint, not impressed. Antennal club (δ) subequal in length to the funicle; terminal joint of maxillary palpi pointed, scarcely truncate at apex. Thorax unusually large and convex, nearly twice as wide as the head and but little narrower than the elytra; sides diverging slightly from the base to beyond the middle, then more suddenly but not angularly rounded and more strongly convergent to apex; apical marginal impressed line distinct throughout; base abruptly convex from the rather fine marginal line. Subcostiform lines of the elytra feebly indicated. Legs stouter than usual. Length $8\frac{1}{2}$ – $9\frac{1}{2}$ mm.

Hab.—Oregon (Corvallis). One pair submitted by Mr. Wickham.

The above description has been drawn from the male. The female scarcely differs except in size, and in having the sides of the thorax and elytra, also the abdomen and legs, in great part testaceous. *Robusta* is most closely allied to *longiclava*; the form is here, however, more robust, the antennal club is of the usual length, and the sides of the thorax are less angulate than in any other species except *picea*. There is a very faint indication of a median impressed line on the pronotum.

16. **D. clypeata** Horn.

This species was described from a single female specimen from California, and still stands as the sole representative of the species in the Horn collection. There is a second specimen (also a female) in the LeConte collection, which differs from the Horn type very slightly in coloration, the sides of the thorax and the elytra being yellowish, the latter with the costae darker, and with the feet piceo-testaceous, while the type is described as piceous with the elytra luteous.

On the 26th of March, 1895, Mr. Ricksecker collected at Sylvania many specimens of an entirely black *Dichelonychia*, which he writes me were "found near some spruce timber in puddles of water on a road side." Examples sent to Dr. Horn were pronounced a new species. They were all obviously of the same sex, and judging, no doubt, from the length of the antennal club, the Doctor supposed them all to be females. Mr. Ricksecker accordingly distributed his specimens with the label "n. sp.;" but for some reason he has more recently sent some out as *clypeata*. Whatever prompted the change, it is a correct one, for the species is undoubtedly *cly-*

peata, as is made sure by a careful comparison with the types in the Horn and LeConte collections, made at my suggestion by Mr. Liebeck and Mr. Blanchard respectively. Oddly enough, the whole catch made by Mr. Ricksecker are males, and not females as supposed by Horn. The short antennal club, and the stout posterior thighs certainly are of the female type, but the form of the abdomen is that common to all males, and, moreover, the date of appearance would indicate the latter sex. To settle the matter definitely, several specimens were dissected, with the result as above stated. *Clypeata* is surely the most aberrant species of the genus in our fauna, differing from all others in color, in the short antennal club of the male, in the strongly advanced clypeus, and in the dilation of the latter at the sides.

17. **D. truncata** Lec.

A small species, easily recognized by the sharply angulate clypeus, which is usually a little emarginate anteriorly, instead of being rounded as is usual. The punctuation of the thorax is very fine and dense, the terminal joint of maxillary palpi widest behind the middle and narrowly truncate at tip. The elytra are normally piceous, with a more or less distinct bronze or green surface lustre, but are sometimes entirely testaceous. In distribution *truncata* ranges from the plains adjoining the Rocky Mountains on the east (Nebraska, Colorado and Montana), through Utah and Nevada to the Pacific Coast (Oregon to Southern California). It is not rare in Southern California, occurring on both sides of the Sierras from the valleys up to 6000 feet elevation. At the higher altitudes it is most frequently taken on pines.

18. **D. picea** Horn.

I have seen but two specimens, one of these being the type. In these the clypeus differs somewhat in form, but in both it is more strongly arcuate at middle than usual, and is also more sparingly punctate than in any of our other species. The 8-jointed antennæ, and the uniformly rounded (not angulate) sides of the thorax are its most notable peculiarities. The terminal joint of the maxillary palpi is slender and narrowed toward the apex. It is probably confined to the more elevated portions of the Cape region of Lower California.

19. **D. pusilla** Lec.

In well preserved specimens the pubescence is seen to be sparser or nearly wanting in several longitudinal lines on each elytron, giving a distinctly vittate appearance which is peculiar to the species. The thoracic sulcus is rather less pronounced than in the other members of the group, and the posterior tibial spurs are of the type prevailing in the species with non sulcate thorax. For these reasons I have thought best to place it at the head of the group rather than at the end, where it was left by Horn. It is common in the Southern Californian coast region from San Diego to Santa Barbara, and I have seen one example from as far north as Monterey. Wickham reports taking a single specimen at Coolidge, New Mexico. I suspect this may be an error in determination, and that his specimen is one of the varieties of *sulcata*. I have taken specimens in numbers in early June flying at dusk about the flowers of *Adenostoma fasciculata* in the foot hills near Pomona, and have also taken it at same time of day flying about rose bushes in the city itself.

20. **D. decolorata** sp. nov.

Body beneath, head, thorax, suture and lateral stripe on the elytra, black; otherwise testaceous. Head densely subrugosely punctate, vertex with rather small fusiform smooth space which does not reach the clypeal suture: clypeal suture impressed, strongly angulate; clypeus moderately reflexed, truncate, or very feebly arcuate in front, lateral angles broadly rounded, sides a little convergent anteriorly. Thorax with rather shallow median groove, surface moderately closely punctate laterally, more finely and sparsely toward the middle; basal and apical marginal lines distinct; sides obtusely angulate just before the middle, feebly sinuate posteriorly, hind angles obtuse, not at all prominent. Elytra rather finely and not densely punctate. Spurs of hind tibiae slender, nearly equal. In the male the outer spur is, however, more obtuse at tip than the inner, while in the female there is no apparent difference in this respect, both spurs being acute. Length 9-11 mm.

Hab.—California (Santa Clara and Monterey Counties), 2 males, 3 females.

The color of this species, as above described, is that of the two males, and is almost precisely that of *lateralis*, except that in the present species there is no noticeable metallic lustre. The three females are testaceous throughout. *Decolorata* is nearest the Marin County specimens assumed to be *valida*, but is clearly distinct by the color, finer and sparser punctuation of thorax and elytra, the denser punctuation of the clypeus, more strongly angulate clypeal suture and shallower pronotal groove. The hind claws are slightly but distinctly cleft.

21. **D. valida** Lec.

As collections now stand this name is quite generally used for two or more distinct species. Unfortunately the type of *valida* was a unique female; a fact which makes its identification a matter of some uncertainty, and compels us to depend largely on the type locality (San Francisco). I received some time ago from Dr. Van Dyke several males taken by him in early spring near San Francisco (Marin County). These are all rather small (9–10½ mm.), black, with dark bottle green elytra, rather widely reflexed and nearly impunctate clypeus, clypeal suture almost obliterated, hind tibial spurs (♂) nearly equal, posterior unguis distinctly cleft near the tip. Two females were subsequently received, the first surely or this species, since it was associated with additional males of the type above mentioned, and not differing materially from them in either color or size; the other unassociated with males, larger, and showing a tendency toward paleness in thorax and legs, as is described of the original *valida*. In view of the very general variability of this sex in size and color it is probable that the species above mentioned is the true *valida*. I have also placed with it for the present Oregon specimens, which have passed as *valida*, and from which, if I mistake not, the male characters as described by Horn was taken. In these specimens there seems to be a more evident disparity between the spurs of the hind tibiae in the male, as well as some other differences when compared with the San Francisco ones, and it may have to be given a distinct name when we have accumulated material sufficient for a thorough study. As here understood, *valida* is confined to the Coast Range from Middle California to Oregon. The Sierra species which has passed under the same name is here described as *vicina*. In the formation of the spurs of the hind tibiae in the male it is clearly distinct from *valida* and more nearly related to *sulcata* of the Rocky Mountains.

22. **D. vicina** sp. nov.

This name is proposed for a form which passes usually as *valida*, but which I have seen labeled *sulcata* in at least one collection. It is, in fact, very closely related to *sulcata*, with which it agrees almost completely, except in the following respects: The elytra are always of a brilliant green color, the thorax is punctured over the greater portion of its surface, the clypeal suture is less deeply impressed, and the size, on the average, is a little larger. The females

are frequently rufous, except the elytra. Specimens vary in length from $9\frac{1}{2}$ –13 mm. It is common in the Sierras of California (Kern, Tuolumne, El Dorado and Placer Counties), being found during June and July on coniferous trees. It is at once distinguished from *valida* by the greater disparity in the size of the spurs of the hind tibiae in the male.

23. ***D. sulcata* Lec.**

The smooth thorax, deeply impressed clypeal suture, form of the spurs of the hind tibiae (♂) and the color, are the chief characteristics of this species. It occurs in the mountains of Colorado and New Mexico. Specimens from Montana (Helena) in the Hubbard and Schwarz collection, have a more numerous punctate thorax, and are possibly distinct, but are best left here for the present. The same may be said of a series of specimens recently taken by Mr. Schwarz at Winslow, Arizona. These latter are paler than typical *sulcata*, and with humeral and apical spots of darker metallic green much as exist in *subvittata*.

24. ***D. lateralis* sp. nov.**

Form, size and sculpture nearly as in *albicollis*. Body beneath, head, thorax, tarsi, middle and hind tibiae (in great part) piceous; front of clypeus, mouth, palpi, antennae and legs, except as above noted, testaceous; elytra testaceous, the suture narrowly, and the sides, except the margin, more broadly but diffusely blackish, with faint greenish or violet reflection. Specimens not fully colored have the elytra entirely testaceous, except the humeri and apices, or the entire insect may be testaceous. Head with rather broad median longitudinal impunctate area; pubescence of upper surface sparse and inconspicuous; the elytra less evidently tricostate than in *albicollis*. Spurs of hind tibiae of ♂ nearly as in *albicollis*, the outer much broader than the inner and distinctly twisted. Length 10.5–14 mm.

Hab.—California, Placer County (Van Dyke); Nevada (Fuchs).

The color of this species is apparently not at all due to immaturity, and is very constant in type in the eleven examples before me. None of the specimens of *albicollis* which I have examined show the well defined smooth frontal line, which is so well marked in *lateralis*.

25. ***D. albicollis* Burm.**

The range of this familiar species is nearly that of *elongata*. I have taken it on pines in New Hampshire and Massachusetts, where it is less common than *elongata*. Dr. Hamilton mentions its occurrence on spruce in Western Pennsylvania.

CÆNONYCHA.**C. parvula** sp. nov.

Form oblong-oval, brown, moderately shining, pubescence rather plentiful. Head coarsely, closely punctate, the punctuation very shallow on the clypeus, but gradually deeper posteriorly. Clypeus broadly emarginate, the angles prominent and nearly right; clypeal suture distinct but not impressed. Thorax a little less than twice as wide as long, formed as usual in the genus, uniformly closely, and rather strongly punctate. Elytra oblong-oval, widest behind the middle; humeri distinct but not prominent, apex subtruncate; surface nearly as closely punctate as the thorax. Body beneath sparsely pubescent, the abdomen more closely and strongly punctured than usual. Length 6-7 mm.

Described from two examples of doubtful sex, collected by Dr. F. E. Blaisdell at Poway, near San Diego, California.

This species is nearest *ovipeennis* in size, but is slightly smaller than that, and therefore decidedly smaller than either *rotundata* or *socialis*. It differs from all these by the closer relatively coarser punctuation both above and beneath. The general outline, and the form of the clypeus is nearly as in *socialis*. The antennæ are 10-jointed, but the 6th and 7th joints are less distinctly separated than the others. The wings are probably rudimentary.

CANTHARIS.

There are few genera of like extent in which the species are, as a rule, identifiable with greater ease and certainty than in *Cantharis*. There are, it is true, a considerable number of entirely black species, which, at long range, seem strikingly similar; but the small differences in outline or proportions of parts are very constant, and these supplemented by the pronounced sexual characters observable in the antennæ, coxæ or abdomen make their separation and recognition simple enough. But here, as elsewhere, the rule is not without its exceptions, the difficulties in this case being centered in *stygica* and *sphaericollis*. The series of *stygica* in the Horn and Le Conte collections which, at the time of their arrangement by Horn exhibited only a laudable conservatism, have gradually reached a complexity which, through their influence as standards of reference, has become general.

Not long since I received from my friend, Mr. Ralph Hopping, of Kaweah, Cal., two forms of *Cantharis*, concerning which he desired an expression of opinion. Both had been identified for him as *stygica*, but from their appearance and habits, he was convinced of their distinctness. A little investigation satisfied me that the

two forms were not only distinct, but that neither one of them was really *stygia*. This conclusion prompted an attempt at further analysis of the *stygia* complex, and as a result of my study I shall in the following pages define five species from the material at hand. Each of these is represented by a fairly good series: but after setting these aside there still remain sundry individuals which indicate that the possibilities have not yet been exhausted. The problem is really a very difficult one, and I am by no means certain that the results thus far reached may not be modified by further experience.

There is yet no good reason to doubt the correctness of Horn's course in uniting *dolosa* Lec. and *smaragdina* Lec. with *stygia*. These forms differ very little except in color, varying from black in Washington and Oregon, through dark blue (Northern California) to a more or less brilliant green in the southern Sierras of California. The true *stygia*, as represented in Southern California by the form *smaragdina*, appears to be confined to the more elevated regions, being not rare at altitudes of 5000 to 7000 feet. The form to which I have given the name *purpurascens* is purplish or violet-black, and with rather more slender thorax and antennæ. It inhabits the valleys from Kern to San Diego Counties. *Chloris* is distinguished by its comparatively slender antennæ and by the pubescence being whitish instead of blackish as in all others of the *stygia* group. It is found in Kern and Tulare Counties, "always at about 1000 feet elevation" (Hopping). *Nigripilis* occurs in the same region, but at decidedly greater altitudes (2500-5000 feet) as I am told by Mr. Hopping. It is unquestionably a good species, differing conspicuously by the abundant pubescence of the upper surface. *Stolidu* is a stouter black or greenish black form inhabiting the region about San Francisco; it is separable from the others by the form of the head, this being gradually wider behind instead of parallel.

In the case of *sphericollis* it is quite as difficult to draw any very satisfactory lines of division. Typical *sphericollis* inhabits the plains east of the Rocky Mountains from Dakota to New Mexico. It is greenish bronze in color and with a slightly transverse, very convex (subglobose) thorax. Specimens from the mountains of Colorado (Estes Park) are quite true to type, though blue in color; others from Eastern Washington (Spokane and Pullman), and Eastern California (Owen's Valley), the former green, the latter blue, are less shining and have a somewhat less convex thorax,

which is scarcely at all transverse; these also may, I think, be fairly considered no more than local races of *sphaericollis*.

On leaving the arid regions and passing over the mountains into the true Pacific fauna, we encounter a form, of which examples from Northern California (Shasta and Siskiyou Counties) may be considered typical, that seems worthy of a specific name; it may be called *infidelis*. In this the thorax is distinctly more elongate and less convex than in *sphaericollis*, the color is deep blue, and the size rather greater on the average. With these I have also placed a series of black specimens from the vicinity of San Francisco.

Specimens bearing the label *compressicornis* are in most collections, but in the material sent me for examination these are all *sphaericollis*. The former should be known by the strongly transverse intermediate antennal joints of the male. These same joints, as Mr. Blanchard writes me after examining the LeConte series, are distinctly concave as though fitted for clasping; a character which Mr. Liebeck has more recently verified for me in the Horn types. In *sphaericollis* the same joints are as long as wide or very nearly so.

It seems not to have been remarked that in all the species of this group (presumably—though I have not verified it in *convexa*), the front tibiæ are densely pale pubescent on the inner side in both sexes, almost throughout their length.

In view of the numerous additions and changes since Horn's most excellent Review* of the species in 1873, it has been thought worth while to embody in a single table these somewhat scattered observations and corrections. Following the table will be found brief descriptions of the forms here recognized as new.

- | | |
|--|------------|
| Antennæ of male with intermediate joints either deformed or thicker than those which precede or follow. Antennæ more or less moniliform in both sexes, gradually stouter to tip in the female and not much longer than the head and thorax; longer, but never equal to half the length of the body in the male. | Group I. |
| Antennæ not appreciably dissimilar in structure in the sexes, though usually somewhat longer in the male; either moniliform or slender; in several species longer than half the length of the body. | Group II. |
| Antennæ with compressed joints; joints 5-10 subquadrate or distinctly transverse; thorax convex, somewhat globose in form; both hind tibial spurs slender and acute; front tibiæ densely pubescent on the inner side. | Group III. |

* Proc. Am. Phil. Soc., 1873, p. 103.

I.

- Antennæ (♂) with joints 4-6 having a prolongation from their upper side. Middle tibiæ of ♂ flattened, and near the tip somewhat contorted. Black, occiput red, with median black line. Length 25-29 mm. *Hab.*—Texas, near the Mexican border..... **eucera.**
- Antennæ (♂) with the fifth joint excavated and prolonged upward at the distal end. Head (except in front) and thorax red, elytra finely scabrous. Length 20-25 mm. *Hab.*—Arizona..... **mutilata.**
- Antennæ (♂) with joints 4-7 elongate-triangular, the apex slightly produced on the under side. Black, head behind the eyes and thorax, rufous. Length 18-22 mm. *Hab.*—Cape San Lucas..... **peninsularis.**
- Antennæ (♂) with the intermediate joints, usually 4-7, more or less enlarged. Pygidium of ♂ elongate and dilated at tip; head black, thorax and elytra yellow, the former with four small black spots in a transverse line, the latter with a smaller black spot at basal third, and a larger one at apical third. Length 15-20 mm. *Hab.*—Texas, near the Mexican border..... **quadrinaculata.**
- Pygidium of ♂ elongate and more or less acute at tip (except *deserticola*). Head and thorax more or less rufous; middle tibiæ of ♂ not compressed near the apex.
- Thorax pentagonal, angulate at sides.
- Legs black; thorax not tuberculate at sides; head orange-yellow, black between and before the eyes, rarely entirely black; thorax orange-yellow, often with a median black stripe, rarely black except the lateral angles; elytra scabrous or obsoletely reticulate. Length 10-28 mm. *Hab.*—California (San Diego to Owen's Valley), thence northward by the desert regions of Nevada to Southern Oregon. **vulnerata.**
- In the var. *cooperi* the elytra are coarsely reticulate, varying to finely reticulate; it occurs in California, Oregon, Washington and Idaho.
- Legs black; thorax trituberculate each side behind the lateral angles; head and thorax red, labrum and epistoma black; elytra black, coarsely reticulate. Length 25 mm. *Hab.*—Santa Margarita Island (Lower California)..... **margarita.**
- Legs red, tarsi blackish; head and thorax red, elytra black, strongly reticulate. Length 23-35 mm. *Hab.*—Owen's Valley, California, to the Gila River, Arizona..... **magister.**
- Thorax subtransverse, broadly rounded at sides, marked with a transverse row of four small black spots; femora red, tipped with black; tibiæ and tarsi black; elytra finely reticulate. Length 18-25 mm. *Hab.*—Arizona and New Mexico..... **deserticola.**
- Color entirely black; middle tibiæ of ♂ rather strongly compressed near the apex.
- Thorax subpentagonal, not angulate at sides, as wide as or slightly wider than long; joints 4-7 of ♂ antennæ enlarged, 5 and 6 largest, but 4 and 7 much larger than 8; sixth ventral of ♂ with a deep and broadly rounded emargination, the lateral angles acutely produced; pygidium sinuate before the apex, which is acutely pointed; color black. Length 15-19 mm. *Hab.*—Southern California (Poway, Warner's Ranch, Temecula)..... **morosa.**

- Thorax oblong, slightly longer than wide, sides broadly arcuate in front; joints 4-6 of ♂ antennæ enlarged, 7 scarcely different from 8; sixth ventral of ♂ broadly, moderately, deeply emarginate, the lateral lobes rounded and not produced; pygidium acutely oval at tip; color black. Length 15-20 mm. *Hab.*—Southern Arizona, Lower California (San Jose del Cabo).....**melena.**
- Pygidium of ♂ broadly rounded or truncate at apex.
- Hind trochanters of ♂ with an acute spine.
- Fifth abdominal segment of ♂ emarginate from side to side, lateral lobes prominent; color green, head and thorax brilliant æneous, elytra usually with strong cupreous or violaceous metallic lustre. Length 16-28 mm. *Hab.*—"Minn.;" Mont., Wyo., Colo., Kans.**nuttalli.**
- Fifth abdominal segment of ♂ acutely notched at middle, lateral lobes broadly rounded; head and thorax green, elytra bluish or violet, rarely green. Length 13-18 mm. *Hab.*—Mont. and Wyo. to Wash., Oreg. and Cal.....**cyanipennis.**
- Hind trochanters of ♂ without spine.
- Body above glabrous or nearly so.
- Antennal joints 4-7 (♂) with short erect hairs on the anterior face; color green, elytra varying to violet. Length 15-18 mm. *Hab.*—Kansas, Colorado.....**viridana.**
- Antennal joints 4-7 (♂) pilose on their posterior face; color black throughout. Length 15-20 mm. *Hab.*—California (San Diego and vicinity)**tenebrosa.**
- Antennal joints of ♂ not pilose.
- Thorax as wide as long, pentagonal, sides obtusely angulate; joints 4-7 of ♂ antennæ much enlarged, 5 and 6 largest; fifth ventral of ♂ not emarginate, sixth deeply and broadly impresso-emarginate, the lateral lobes prominent. Length 15-18 mm. *Hab.*—Nevada and desert regions of Eastern California.....**ulkei.**
- Thorax longer than wide, sides broadly arcuate, not in the least angulate.
- Joints 3-5 of ♂ antennæ most evidently dilated; fifth ventral of ♂ deeply emarginate; black, thorax rarely in part rufous. Length 13-18 mm. *Hab.*—California (Los Angeles Co. to Mendocino Co.), Lower California.....**childii.**
- Joints 4-6 of ♂ antennæ most enlarged; fifth ventral of ♂ not perceptibly emarginate; black throughout. Length 13-18 mm. *Hab.*—California (Lake, Sacramento and Tulare Counties).**funerea.**
- Body above conspicuously pubescent.
- Body above black, thorax coarsely punctate. Length 13 mm. *Hab.*—Colorado, Arizona.....**puberula.**
- Body above in great part yellow; thorax nearly smooth, base emarginate at middle. Length 7.5-15 mm. *Hab.*—Montana to New Mexico and Arizona.....**biguttata.**

II.

Anterior tibiae of ♂ with one spur; hind trochanters subangulate.

Elytra finely punctured, rather glossy, antennae stout. Length 18-23 mm.

Hab.—New Mexico and Arizona.....**gentilis.**

Elytra scabrous, subopaque, antennae slender. Length 12-23 mm. *Hab.*—Southern California to Sacramento and Owen's Valley.

moerens.

Anterior tibiae of ♂ with two spurs.

Outer spur of hind tibiae short, stout, broader and concave at tip.....1.

Outer spur rather slender, laminate at tip.....2.

1. Elytra black, finely scabrous; hind trochanters of ♂ with an acute spine on the posterior edge near the tip.

Thorax more elongate, entirely black. Length 18-23 mm. *Hab.*—Southern California.....**insperata.**

Thorax broader, subpentagonal, red, with a large basal spot and narrower apical margin black. Length 11-21 mm. *Hab.*—Southern California (Kern Co.), "Washington" (Fuchs).....**molesta.**

Elytra reticulate; hind trochanters of ♂ not spined.

Thorax rather coarsely numerously punctate; elytra coarsely reticulate; color black throughout. Length 11-25 mm. *Hab.*—Kansas, Colorado, New Mexico.....**reticulata.**

Thorax nearly smooth.

Head (except in front), thorax and basal margin of elytra red; elytra coarsely reticulate. Length 15-17 mm. *Hab.*—Arizona.

agrestis.

Head black, with large yellow frontal spot; thorax black, sides bordered with red; elytra black, finely reticulate. Length 17-20 mm.

Hab.—Texas.....**eribrata.**

Elytra fulvous or luteous.

Head and thorax black. Length 15-25 mm. *Hab.*—Colorado, Texas.

fulvipennis.

Head, thorax and elytra luteous. Length 12-20 mm. *Hab.*—Texas.

dichroa.

2. Antennae moniliform, scarcely longer than the head and thorax; black, occiput red, with narrow median black line; elytra obsoletely scabrous. Length 12.5-19 mm. *Hab.*—Southern California.

occipitalis.

Antennae slender, usually as long as or longer than half the body.....3.

3. Thorax as wide as or wider than long; not or scarcely narrower than the head.....4.

Thorax longer than wide and more evidently narrower than the head.....7.

4. Head and thorax black, or of the same color as the elytra.....5.

Head or thorax, or both, more or less yellowish red (except *difficilis*).....6.

5. Hind trochanters of ♂ subangulate beneath; black, without lustre. Length 12-23 mm. *Hab.*—California (San Diego Co. to Lake and Plumas Counties).....**incommoda.**

Hind trochanters of ♂ oval.

Pubescence sparse, blackish, elytra usually with at most a few scattered erect hairs, which are more noticeable toward the base.

Antennæ (♂) stouter, outer joints more oval, usually distinctly less than twice as long as wide.

Head broader, subtriangular, the sides a little divergent behind; form stouter, the legs shorter and less slender; third antennal joint relatively more elongate; color dull black, rarely greenish black. Length 8-14 mm. *Hab.*—California (San Francisco)...**stolida**.

Head quadrate, sides parallel behind the eyes; form less robust; legs rather longer and more slender; third antennal joint less elongate; color varying from black through blue to a more or less brilliant green. Length 9-14 mm. *Hab.*—California, Oregon, Washington.....**stygica**.

Antennæ (♂) more slender, joints 3-11 more than twice as long as wide, the outer joints more cylindrical; color black, elytra with faint purplish or violet lustre. Length 7-14 mm. *Hab.*—Southern California.....**purpurascens**.

Pubescence short, sparse, whitish throughout; antennal joints more parallel and elongate than in *stygica*; color brilliant green. Length 7-12 mm. *Hab.*—California (Kern and Tulare Counties)...**chloris**.

Pubescence black, moderately long and very conspicuous; black, elytra bluish black. Length 8-14 mm. *Hab.*—California (Tulare and Tualumne Counties).....**nigripilis**.

6. Occiput red, thorax and elytra dark bluish green; surface with well-marked pale pubescence. Length 8-15 mm. *Hab.*—California (Middle and Southern); Lower California.....**auriculata**.

Head and elytra brilliant viridi-æneous, thorax reddish yellow, with median metallic green spot. Length 8-10 mm. *Hab.*—California ("Millerton").....**refulgens**.

Head behind the eyes, and thorax, red; elytra dark green. Length 8-12 mm. *Hab.*—Southern California.....**æneipennis**.

Head greenish black; thorax red, elytra dark green. Length 8-10 mm. *Hab.*—California (San Diego).....**crotchii**.

Body black throughout, without lustre; head coarsely punctate; antennæ more slender, thorax smaller and more narrowed behind than in *stygica* or *stolida*. Length 10-12 mm. *Hab.*—California (San Diego).....**difficilis**.

7. Color above reddish testaceous, "elytra sometimes black." Length 13-18 mm. *Hab.*—Southern California, Lower California....**nitidicollis**.

Color entirely black. Length 10-16 mm. *Hab.*—Southern California.

lugens.

Head and thorax viridi-æneous, elytra violaceous or cupreous. Length 7-12 mm. *Hab.*—California (Sacramento to Tulare Co.)...**rathvoni**.

III.

Anterior tibiae of ♂ with two spurs.

Antennæ moderately compressed, intermediate joints (♂) not or scarcely wider than long; scutellum rather deeply sulcate.

Thorax very convex, as wide as or somewhat wider than long; color green or blue. Length 8-13 mm. *Hab.*—Dakota and Kansas to Eastern Washington and California.....**sphaericollis**.

Thorax less convex, a little longer than wide; color deep blue or black.

Length 8-15 mm. *Hab.*—Pacific Coast region from Washington to San Francisco **infidelis.**

Antennæ of ♂ very strongly compressed; joints 5-10 about twice as wide as long; scutellum feebly sulcate. Length 8-12 mm. *Hab.*—California (Owen's Valley) **compressicornis.**

Anterior tibiæ of ♂ without terminal spurs; anterior femur of ♂ with spine near the base. Length 12 mm. *Hab.*—Texas, Colorado.

convexa.

C. peninsularis sp. nov.—Black; head (except anteriorly) and thorax red, surface feebly shining. Head quadrate, parallel behind the eyes, sparsely finely punctulate. Thorax slightly narrower than the head, subpentagonal with the side angles broadly rounded, disk flattened with four rather feeble impressions, the lateral ones usually distinct, the basal and apical ones nearly obsolete; punctures very few and fine. Elytra finely scabrous, a little smoother at base. Lower surface finely, moderately closely punctulate and pubescent, the metasternum—except along the median line—and the coxæ and basal parts of the femora with denser and longer pubescence than usual. Tarsi slender; hind tibial spurs very unequal, the outer stout, cylindrical, broader at apex, which is obliquely truncate and concave.

Male.—Antennæ longer and more slender, joints 4-10 triangular shorter, 4-7 produced a little at the apex on the lower (inner) side, their inferior outline thereby distinctly arcuate; eleventh joint very narrow and pointed, about as long as the seventh; fifth ventral broadly emarginate, sixth acutely and rather deeply notched; pygidium rounded at apex.

Female.—Antennæ shorter, relatively stouter, joints 4-7 not modified; fifth ventral truncate, sixth with a small subtriangular emargination. Length 18-22 mm.

Hab.—Cape San Lucas, Lower California.

This species was given me several years ago by Mr. Fuchs as *mutilata*. The latter has quite different male antennæ, the head is widened behind, the pubescence of the lower surface is shorter and the tarsi stouter. In the female the antennal joints are rounded in *mutilata*, and more elongate and subtriangular in *peninsularis*. The male ventral characters are also quite different.

C. margarita sp. nov.—Head and thorax red, labrum and epistoma black, elytra black, coarsely reticulate. Head and thorax sparsely punctate, the latter strongly angulate at sides and with three acute tubercles along the side margin posteriorly. Outer spur of hind tibiæ very much broader than the inner one and thinned or laminate from the base. Length 24 mm.

The single example is a male having the fifth ventral sinuate, and the sixth with a shallow emargination which is very obtusely angulate at bottom. The antennæ are scarcely perceptibly thickened at middle, and for this reason the species would perhaps be more appropriately referred to Group II. It is, however, so much like

cooperi and *magister* in general facies that it would surely be placed near them in a cabinet arrangement; in fact the specimen here described had been labeled *cooperi* by Mr. Fuchs, in whose collection the type remains. In addition to the sculpture of the head and thorax, the greater difference in the size of the hind tibial spurs, and the sexual differences of antennæ and abdomen, *margarita* is further distinguished from *cooperi* by the head not being sinuate behind and by the much stouter less compressed tibiæ. The type is from Santa Margarita Island, Lower California.

C. morora sp. nov.—Black, glabrous, shining. Head and thorax polished, with very few fine scattered punctures, elytra finely scabrous. Antennæ (♂) a little longer than the head and thorax, with joints 4–7 much enlarged, 8–10 subglobular, the eighth a little elongate. In the female the antennæ are shorter and gradually incrassate as usual. Head quadrate; thorax as wide as long, subpentagonal, with side angles rounded; disk quadri-impressed, the lateral impressions sometimes obsolete. In the male the middle tibiæ are distinctly compressed near the apex; the fifth ventral is distinctly sinuate at middle, the sixth with a broad deep rounded emargination, the lateral lobes acutely prominent. The outer spur of the hind tibiæ is obviously stouter than the inner, but the difference is not as strongly marked as in many species. Length 15–19 mm.

Hab.—California, San Bernardino, Riverside (Temecula) and San Diego (Warner's Ranch, Poway) Counties. Collections of Dr. Blaisdell and Mr. Fuchs.

C. funerea sp. nov.—Black, glabrous; head and thorax shining, nearly impunctate; elytra feebly but not very finely scabrous, somewhat shining. Antennæ (♂) a little longer than the head and thorax, joints 4–6 enlarged, the 3rd and 7th also a little dilated, 8th a little narrower than the seventh and slightly elongate, 9th and 10th about as wide as long. In the female the antennæ are rather shorter than the head and thorax and gradually stouter, the outer joints about as wide as long. Thorax a little narrower than the head, suboval, sides broadly rounded, a little more strongly so in front; disk moderately and nearly evenly convex, with a feebly impressed or subobsolete median line. Legs slender, anterior tibiæ of ♂ with two spurs, outer spur of hind tibiæ stouter than the inner, broader and concave at tip. Fifth ventral (♂) truncate, sixth broadly arcuately emarginate, the lateral lobes slightly prominent; pygidium rounded at apex. Length 13–18 mm.

Hab.—California, Lake, Sacramento and Tulare Counties.

One ♂ in Dr. Van Dyke's collection, and 2 females submitted by Mr. Fuchs are all I have seen of this species. It resembles several other black species in a superficial way, but is easily separated from all others by the form and sculpture of the thorax, combined with the sexual characters of the antennæ and abdomen. Its nearest

allies appear to be *childii* and *melana*, from both of which the characters given in the table readily separate it. In *childii* the antennæ are obviously longer in both sexes.

C. agrestis sp. nov.—Head and thorax red, the former black in front, surface polished and very sparsely finely punctulate; elytra black, basal margin red, surface coarsely reticulate and subopaque. Head parallel behind the eyes. Antennæ a little longer than the head and thorax in the female, joints elongate-oval or subelliptical; a little longer and slightly stouter in the male. Thorax as long as wide, slightly narrowed behind, more strongly so in front, sides arcuate. Body beneath black, moderately, closely, finely punctate, with short black pubescence. Legs rather slender. Fifth ventral (♂) rather feebly sinuate at middle; sixth with a small triangular emargination, which is about as deep as wide. In the female the fifth ventral is truncate, the sixth subsinuate at apex. Tibial spurs as in *reticulata*. Length 15–17 mm.

Hab.—Arizona. Two males and one female in the National Museum collection. Probably most nearly related to *cribrata*, specimens of which I have not seen. The latter is said to have the elytra finely reticulate, which is not the case in *agrestis*, and there are differences in coloration.

C. stolidia sp. nov.—Rather robust, black, or more rarely greenish black, head somewhat shining, thorax and elytra dull. Head subtriangular, evidently broader behind, punctuation rather coarse, moderately coarse at sides, sparser at middle; frontal spot present. Antennæ of ♂ scarcely passing the middle of the elytra, joints oval, 4–10 not more than one half longer than wide; third but little shorter than the fourth and fifth united. Thorax nearly as in *stygica*. Elytra finely scabrous, almost without pubescence. Fifth ventral of ♂ feebly sinuate, sixth acutely notched and longitudinally impressed, the lateral lobes broadly rounded. Length 8–14 mm.

Hab.—San Francisco.

This species is certainly near the black Oregon and Washington forms which constitute the typical *stygica*. Its more robust form, somewhat shorter and stouter legs, the evidently divergent tempora, and the relatively longer third antennal joint seem to me sufficient cause for its separation. I take this course with more confidence, inasmuch as specimens sent to Mr. Blanchard and compared by him with the LeConte types, seemed to him clearly distinct.

C. purpurascens sp. nov.—Rather slender, black, with faint purplish or violet lustre, which is more conspicuous on the elytra. The color is very constant in the ten examples before me. The thorax is somewhat more elongate than in *stygica*, the pubescence more evident, though sparse, and the antennæ (♂) are evidently more slender, joints 3–11—except possibly the tenth—being more than twice as long as wide. Length 7–14 mm.

Hab.—California.

This species occurs at low elevations in Los Angeles County (Pasadena) and at Riverside, also in Kern County.

C. chloris sp. nov.—Brilliant green, elytra more roughly scabrous and opaque than in the green and blue forms of *stygica* (*smaragdina* and *dolosa*); pubescence whitish throughout, but sparse and inconspicuous above. Antennæ slender, the outer joints (♂) more nearly cylindrical and fully twice as long as wide. Length 7–12 mm.

Hab.—California.

I have seen numerous specimens collected in Kern and Tulare Counties.

C. nigripilis sp. nov.—Black, elytra blue-black. Head and thorax polished, moderately punctate, elytra dull, scabrous, pubescence black, erect, and far more abundant and conspicuous than in any of the other forms that have passed as *stygica*. Antennal joints 8–10 subcylindrical, scarcely twice as long as wide, 11th joint suddenly and very acutely pointed. Fifth ventral segment (♂) broadly, moderately, deeply emarginate and broadly impressed. Outer spur of hind tibiæ less slender than in *stygica*. Length 8–4 mm.

Hab.—Sierras of California, from Tulare to Tuolumne Counties.

C. difficilis sp. nov.—Black, head feebly shining, with small frontal pale spot; thorax and elytra subopaque, the latter nearly glabrous. Head quadrate, parallel behind the eyes, coarsely, moderately, closely punctate. Antennæ (♂) slender, passing the middle of the elytra; joints 3–10 nearly equal in length and very slightly increasing in width, the tenth twice as long as wide. Thorax distinctly narrower and smaller than the head, slightly transverse, sides rounded in front, then nearly straight and distinctly convergent to base; disk feebly convex and sparsely but not very finely punctate. Elytra nearly twice as wide as the thorax, parallel, rather finely scabrous. Length 10–12 mm.

Hab.—California, San Diego.

Described from eight examples collected by Dunn in March and April. The antennæ are shorter in the female as is usual. In the male the fifth ventral is broadly sinuate, the sixth triangularly emarginate, the emargination nearly as deep as wide and with the angle at bottom narrowly rounded. Spurs of hind tibiæ nearly as in *stygica*. *Difficilis* is in most points of structure closely related to *stygica*, but may be distinguished from black forms of the latter by its rather more depressed form, smaller thorax and more slender male antennæ.

C. infidelis sp. nov.

A detailed description of this species is unnecessary, the only differences of note between it and *sphaericollis* being those already mentioned in the table.

C. cooperi.

This form has long stood as a variety of *vulnerata*, and is left so in the preceding table, though I believe this reference to be open to doubt. In all the specimens of *cooperi* that I have seen there is an almost entire lack of the black thoracic stripe which is usual in *vulnerata*; the elytra are coarsely reticulate, and the middle and hind tibiae of the male more strongly dilated than in any males of *vulnerata* that have come under my notice. From Horn's paper there should be intermediates in elytral sculpture, but I have not as yet seen such. *Cooperi* is much more northern in range.

LEPTOGENIUS.

L. virginicus sp. nov.—Rufotestaceous, elytra, except at base, and fifth abdominal segment more or less infusate. Upper surface densely, rather coarsely sculptured, opaque; abdomen beneath more finely and less closely punctate, somewhat shining. The cephalic sculpture consists of contiguous shallow variolate punctures which are coarser beneath than above. The punctuation of the thorax and especially of the elytra is deeper and clearly defined, but appears slightly rugose. The head is slightly shorter than the elytra, the latter a little longer than wide, and equal in length to the first four abdominal segments. Length 1.7–1.8 mm.

This species appears to conform perfectly to Casey's generic diagnosis and must be very close to his *brevicornis*; in which, however, the sculpture is said to be granulose; the elytra are quadrate and (judging from the figure) shorter than the head, and evidently shorter than the first four segments of the abdomen. Of the three examples before me two are males, both having the sixth ventral formed as described by Casey of *brevicornis*. In the single female the apex of the sixth segment is very distinctly broadly angulate. In *brevicornis* the same segment is said to be extremely feebly angulate. My specimens were given me by my friend Mr. W. D. Richardson of Fredericksburg, Va., who very generously donated half his catch. They were all sifted from the refuse underlying a pile of decaying fruit in August.

MYCETINA.

M. endomychoides sp. nov.—Elongate-oval, less convex than *M. perpulchra*, and with the sides of the elytra less rounded. Head and thorax black, elytra rufous, each with two discoidal black spots, the anterior one smaller, obliquely oval, the posterior one large, truncate in front, beginning at the middle and terminating about two-fifths of its own length from the apex. Antennae rufous; legs and under surface inclining to piceous. Punctuation both above

and beneath sparse and fine, the punctures separated as a rule by from two to three times their own diameters. Pubescence of upper surface fine, sparse and inconspicuous, more evident beneath. Prothorax nearly twice as wide as long, sides parallel, narrowed in apical third, feebly sinuate behind, the hind angles a little acute; sides strongly margined; disk feebly convex, longitudinal impressed lines deep, arcuate, reaching about to the middle; transverse sub-basal impressed line as usual. Elytra very slightly wider at base than the thorax and nearly four times as long; sides broadly arcuate, surface faintly rugulose and less shining than the thorax; sutural stria very fine, but evident toward the apex. Length 4 mm.

Hab.—California, Lake Tahoe and Kaweah—one example from each locality.

The few species which we now refer to *Mycetina* (I have not seen *limbata*) exhibit somewhat notable differences, especially in oral and sternal structure, the importance of which cannot be determined until the family has been subjected to monographic treatment. *Perpulchra* and *hornii* are certainly congeneric. In them the terminal joint of the maxillary palpi is elongate-conical and scarcely as wide as the second joint; the terminal joint of the labial palpi subquadrate and squarely truncate at apex; the last joint of the antennæ not longer than the tenth; the prosternum with deep impressed marginal lines which unite at the apex; mesosternum transverse, narrowed in front. While closely allied, they may readily be separated by the form of the thorax—more narrowed in front in *perpulchra* and the difference in the modification of the male tibiæ. *Testacea* differs very conspicuously from the two preceding by the abundant pubescence; the second joint of the maxillary palpi is not wider than the terminal joint; the labial palpi are smaller, the last joint slender and narrowed apically; last joint of antennæ longer than the tenth; prosternum more parallel and not margined; mesosternum slightly longer than wide, the sides parallel. In *endomychoides* the last joint of the maxillary palpi is oval pointed and much stouter than in the preceding species; the labial palpi are smaller, but apparently formed nearly as in *perpulchra* and *hornii*; the last antennal joint longer than the preceding; the prosternum is not margined posteriorly; the mesosternum is quite strongly transverse, the sides parallel, the front angles narrowly rounded. The femora are less clavate than in either of the other species, being more like *Endomychus biguttatus* in this respect, as it also is in the form of the mesosternum and in coloration.

CORYMBITES.

The two species made known below are sufficiently conspicuous to permit their description in an isolated manner. It is to be hoped that the genus may receive a thorough and much needed revision in the near future.

C. mirabilis sp. nov.—Black, elytra ferrugineous brown, vestiture of upper surface dense, sericeous, reddish orange in color, the hairs lying in such directions as to present the appearance of darker bands and spots. As viewed perpendicularly from above they are as follows: the entire posterior half of the prothorax, except for a median transverse row of four small spots; and the front margin, except the angles; on the elytra three transverse bands—a broader irregular sub-basal one, a narrower one slightly post-median, and a smaller one before the apex, all narrowly interrupted at the suture. Antennæ reaching the base of the prothorax, second joint scarcely more than half the length of the third, the latter triangular and nearly as long, but narrower than the fourth; joints 3–11 subequal in length, the middle ones slightly wider and nearly as wide as long. Prothorax as wide as long, sides strongly rounded and deeply sinuate before the hind angles, which are strongly divergent, acuminate, and finely carinate; surface densely, finely punctate. Elytra very slightly wider at base than the thorax, a little wider behind, finely striate, striae punctate, interspaces finely punctulate but not rugose. Beneath sparsely clothed with short brownish hairs. Prothoracic flanks rather coarsely and densely punctate, otherwise finely not closely punctate. Length 9½ mm.; width 4 mm.

This exceedingly beautiful species has been kindly donated by Mr. Ralph Hopping, who took two specimens at Kaweah in the Sierras of Tulare County, California. Three others have recently been taken by Dr. Fenyes near the entrance to Yosemite Valley. The antennæ are nearly as in *fallax*, which species *mirabilis*, in a general way, resembles in the arrangement of the pubescence.

C. tigrinus sp. nov.

Nearly similar in form, color and markings to *trimundulatus*, the principal differences being as follows: Size distinctly larger (12 mm.); thorax more rounded at sides, densely and less finely punctate, disk with a spot on either side of the middle bearing erect black hairs, and posterior to each of these a similar but smaller spot; surface duller; the transverse bands of the elytra blacker, the hairs on these areas being blackish and contrasting sharply with the otherwise grayish pubescence. The antennæ are similar, but the second and third joints are together obviously longer than the fourth, the latter being wider and longer than any of those following.

The unique type is from Lake Tahoe, California. It is appar-

ently a female, and the antennæ do not pass the hind angles of the thorax; they are very likely longer in the male, in which also the sides of the thorax may prove to be less strongly rounded.

ACMÆODERA.

A. bowditchi sp. nov.—Moderately robust, not strongly depressed, piceous bronzed. Thorax with or without a small lateral yellow spot at basal third. Elytra with four more or less irregular transverse rows of yellow spots, which have a tendency to become confluent, especially toward the apex. Head densely punctate, vertical carina feeble. Thorax twice as wide as long, very slightly dilated before the hind angles, rather feebly narrowed in front, lateral margin not visible from above, discal impressions moderate, punctuation dense and moderately coarse at sides, less close and somewhat finer toward the middle. Elytra feebly narrowed to apical third, thence more rapidly to apex; sculpture about as usual. Prosternum slightly retracted, front margin nearly straight. Abdomen rather coarsely and closely punctate, especially toward the apex; apical plate large, truncate or broadly rounded, the free edge thin and even. Length 8-9 mm.

Hab.—Southeastern California; Arizona (Prescott).

At the time of my Revision of *Acmaeodera* I possessed a single specimen of this species, which I was then unwilling to define, but which was set apart as being probably distinct. Since then, through the kindness of Mr. Frederick Blanchard, I have received several examples from Prescott, Arizona, these being a part of a considerable series collected some years ago by Mr. H. K. Burrison and sent by him to Mr. F. C. Bowditch of Boston. The species is dedicated with pleasure to friend Bowditch, to whom we are indebted for its distribution. *Bowditchi* belongs to the Group *Emarginatæ*, and would stand between *flavosticta* and *acuta* in the table of the Group. As compared with *flavosticta* it is less depressed, less pointed behind, the thorax less transverse, the elytral spots more numerous and the abdominal punctuation coarser. As compared with *acuta*, the elytra are somewhat more coarsely sculptured, the fifth interspace is distinctly more convex toward the base, the elytral spots are larger and more constant, the abdominal sculpture coarser and the apical plate wider. The markings are much like those in some specimens of *variegata*, which species is, however, somewhat more depressed, with much more finely punctured abdomen and no apical plate.

A. lucia sp. nov.—Closely related to *pulchella* and *obtusa*, between which it should be placed. The sides of the thorax are slightly but unmistakably retracted behind, instead of being convergent from the base as in *pulchella*; the lateral margin is still more inferior; the thoracic punctuation more shallow and

subvariolate, and the outer antennal joints more acuminate. The lateral thoracic spot is present in all examples seen, and is, as a rule, wider than in *pulchella*. In one example there is a smaller spot within and tangent to the outer one, and in some specimens there is a small yellow spot on each side of the prosternum. The elytral ornamentation resembles in a general way that in certain forms of *pulchella* and is quite variable. It may be described as consisting of four (or five) transverse yellow bands interrupted at the suture, the bands either fairly regular, or quite as often decidedly irregular and frequently so connected laterally as to leave the margin entirely yellow. Length 6-9 mm.

Hab.—California (eastern or southeastern); Arizona (Prescott and Fort Apache); Colorado (Glenwood Springs—Fenyès).

The Prescott specimens are from the same source as in the preceding species, and to Mr. Blanchard is due the credit of first pointing out the differences between it and *pulchella*. The species is dedicated to a friend in grateful remembrance of past favors.

SCYTHIROPUS.

With the accumulation of material it is becoming increasingly apparent that Captain Casey was quite correct in remarking* that the species of this genus are somewhat numerous. Four new species were described by him in the paper mentioned in the foot-note, viz.: *ferrugineus*, *lateralis*, *cinereus* and *crassicornis*, the first named from two examples, the others from uniques. So far as I know none of these are recognized in any other collections, and practically everything is still referred either to *elegans* or to *californicus*. I have been able to identify *ferrugineus* in material sent me by the National Museum, where it passed as *californicus*, but I am as yet quite unacquainted with the other species described by Casey.

Both Horn and Casey were at fault in supposing the variation in the relative lengths of the abdominal segments to be of a specific nature. These differences are purely sexual, and substantially the same in all species, the second segment being nearly equal in length to the two following united in the female, but distinctly shorter in the male. There are differences in the relative lengths of the funicular joints and also in the form of the front and middle tibiae—the latter in part sexual—which are of use in specific characterization, but these—more especially the funicular joints—seem subject to a sufficient amount of individual variation to make their use hazardous except in series.

* On some New North American Rhynchophora. Ann. N. Y. Acad. Sci., iv, 1888, p. 274.

The very small Lower Californian species, more recently described by Horn as *Scythropus delicatulus* is not a *Scythropus* at all. The rostral characters are very different from *Scythropus*, the divergent alæ and long scrobes being nearly as in *Cyphomimus*. In *Scythropus* the tibiæ are mucronate in both sexes; in *delicatulus* they are mucronate in the male only. There are also antennal and abdominal differences, and the coloration is not Scythropoid in type. It is probable that a new genus will be found necessary when the Otiorhynchidæ shall have been properly revised.

Two new names appear in the following tabular statement, following which will be found brief descriptions. It has of course been necessary to use the characters given by Captain Casey, for the separation of the species described by him, and as yet unknown to me.

Scales of elytral disk more or less mottled, especially toward the suture.

Antennal scape long, slender, passing distinctly beyond the posterior margin of the eye.

Body black, legs rufous; vestiture denser, scales of upper surface from one-half longer than wide to twice as long as wide **californicus**.

Body ferruginous throughout; vestiture sparser, scales much more elongate, at least three to four times as long as wide, and at certain parts of the elytral disk—notably in the scutellar region—quite hairlike.

ferrugineus.

Antennal scape short, robust, arcuate, just passing the posterior margin of the eye **crassicornis**.

Scales of elytral disk not mottled, the sides and sutural interspace usually paler.

Elytra tumid at the sides along the humeral interval **lateralis**.

Elytra evenly convex at sides.

Anterior tibiæ of male distinctly arcuate toward the apex, the inner and outer margins nearly parallel; fourth funicular joint subequal to the third **elegans**.

Anterior tibiæ of male less evidently bent toward the apex, the outer margin more broadly arcuate, inner margin more strongly sinuate or roundly emarginate in apical half.

Elytral vestiture relatively sparse, the scales well separated, uniformly cinereous; elytral intervals with a row of erect scales; funicular joints uniformly and rather rapidly decreasing in length **cinereus**.

Elytral vestiture dense, suture and sides paler; erect setæ almost entirely wanting, visible only on the declivity, where they are short, subrecumbent and inconspicuous; fourth funicular joint usually distinctly longer than the third.

Prothorax more transverse; scales of elytra much broader, averaging about one-half longer than wide, those of intervals 2-6 but slightly darker than those of the sutural and outer intervals, ashy white, with faint greenish lustre **albidus**.

Prothorax less transverse; scales of elytra more elongate, fully or more

than twice as long as wide, those of the sides and sutural interval paler and contrasting strongly with the rest of the disk, which varies in color from ochreo-cinereous to greenish or cupreous **miscix**.

S. albidus sp. nov.—Slightly more robust, but rather less convex than *elegans*. Black, legs and antennæ bright rufous; vestiture consisting of broad densely placed scales, which are nearly white on the sutural interval and at the sides of the elytra, elsewhere ashy white, with faint greenish or pearly lustre; elytral setæ visible only on the declivity, where they are short, subrecumbent and inconspicuous. First funicular joint equal to the second and third united, fourth distinctly longer than the third, fifth shortest. Thorax fully one-half wider than long, widest at middle, sides evenly arcuate. Elytra widest at apical third, posthumeral sinuation feeble. Front and middle tibiæ strongly deeply arcuate within in apical half, the inner margin almost angulate above the sinus; outer margin more broadly arcuate toward the apex. Length 6.5 mm.

Described from a single female taken by myself at Lake Tahoe, California.

S. miscix sp. nov.—Black, antennæ rufous, legs blackish in the male, rufous in the female; vestiture dense, sides and sutural interspace of the elytra cinereous, elsewhere with a decided ochreous or greenish tint; scales somewhat variable, but as rule quite twice as long as wide and rather coarsely strigose. Antennæ and legs nearly as in *albidus*. Abdominal setæ unusually numerous and bristling in the male, less so in the female. Length 4.6-6.8 mm.

The type series sent me by Mr. Ricksecker is from the vicinity of Sacramento, California, and was I believe collected by Koebele. With these I have placed specimens from Easton, Washington (Koebele), and Helena, Montana (Hubbard and Schwarz), which conform rather closely to the types, but are very variable in color, some being brilliant green or cupreous. These strikingly resemble *elegans*, but seem distinct and more nearly in accord with *miscix* by the more strongly emarginate, less parallel front tibiæ (♂), by the more arcuate middle tibiæ, the relatively longer fourth funicular joint, the slightly more transverse thorax and the more hirsute abdomen.

Elegans seems to range entirely across the continent, there being specimens from Montana and California in the material before me which I am not able to separate. *Californicus* extends the entire length of the Pacific district, and eastward to New Mexico, if a specimen from the latter locality is properly referred.